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ABSTRACT

The multidimensional concept of health status (complete physical, mental and social well-being, and not merely the absence of disease or infirmity) was applied to migrant farmworkers, in an attempt to propose appropriate measures of the three dimensions of health and general health perceptions (GHP) of past, present and future health status. Data were obtained from the New York Migrant Health Interview Survey, conducted in Wayne County, New York in the summer of 1982. A randomly drawn, representative sample of 218 migrants responded to a 113-item questionnaire containing a limited number of measures concerned with health: 18 items on the Index of General Well-being (GWB) (a composite measure of mental health), 3 items on general health perceptions, and 1 question on physical health. When asked about their GHP, about 23% of migrant farmworkers reported stable health, 3% extremely low health, and 8% excellent health status. The study showed that the number of disability days was not a good measure of the physical health of capacity and the presence and severity of specific health problems was a preferred measure. The measure of mental health status was significantly correlated with the GWB. No measure of social health was included in the survey. (JMM)

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Conceptualization and Measurement of Health Status for Migrant Farmworkers

by

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Abstract

Health status of migrant farmworkers is viewed as a state of complete physical, mental and social well-being. It is argued that the overall health status of migrant farmworkers can be measured in terms of general perceptions of future, present and past health. Specific measures are suggested for each dimension of health status. Application of these measures is also discussed in the paper.

Conceptually, health is viewed as multidimensional in nature. A comprehensive definition was proposed by the World Health Organization in 1948: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." To measure this broad concept of health, both clinical and survey methods can be used. For a study of the health status of the population in general, it has seemed advisable and more economically feasible to develop measures of self-assessed health status. Numerous studies have attempted to construct such measures based on survey data (Maddox, 1964; Belloc, et al., 1971; Hessler, et al., 1971; Lawton and Cohen, 1974; Linn, 1976; Wan, 1976). Many other studies have also shown that measures of self-assessed health status are valid and reliable, and that they are an important element in measures of quality of life (Andrews and Withey, 1974; Campbell, et al., 1976). In a recent Health Insurance Study conducted by Rand Corporation (Ware, et al., 1980), health status was measured not only in terms of its physical, mental and social dimensions but also by an integrative concept, general health perceptions. Measures of general health perceptions differ from other measures of health status in that they ask respondents for a self-rating of their health in general rather than focusing on a specific dimension of health status. Such an underlying general health concept, however, is considered to be related somewhat to each of the three dimensions of health status. Figure 1 presents a diagram of three overlapping circles that illustrates the conceptual relationships among physical, mental, and social health and general health perceptions. However, very little is known about how these dimensions of health status relate to each other or how strong any interrelationships among them may be.

This paper will apply the multidimensional concept of health status to migrant farmworkers and attempt to propose appropriate measures of the four dimensions of health status. On the basis of limited empirical data, efforts will also be made to assess quantitative relationships between physical and mental health and general health perceptions.

The next section discusses the source of data. Section three describes measures of each dimension of health status, and the final section sets forth the implications and conclusions.

Data

The present study is based on data obtained from the New York Migrant Health Interview Survey conducted in Wayne County, New York in the summer of 1982. In order to obtain a representative sample of migrant farmworkers from which to collect health statistics and related information, a special sampling procedure was designed for this survey. The first step was to compile a comprehensive list of addresses for all migrant camps and other migrant housing units in Wayne County. All units on the list were stratified according to the size of maximum capacity. The total number of migrants that could be accommodated in each size category was known. A representative sample of 218 migrants was randomly drawn through a three-stage sampling procedure from all size categories (the sample size was determined by budget constraints). Special efforts were made on October 21, 1982 to find out from owners of migrant camps and other housing units how many migrant workers were actually living in the units. On the assumption that the sampled migrants had characteristics similar to those of migrants enumerated on October 21, the interviewed migrants can be considered a representative sample of total migrant workers in Wayne County on that day (the detailed sampling procedure is described in Chi, 1985a).

Although the survey instrument contained 113 items, only a limited number of measures of health status were included, covering 18 items of the Index of General Well-Being (a composite measure of mental health), three items of general health perceptions and one question on physical health. No question on social health was asked. This paper will use these limited measures to examine the interrelationships among the four aspects of health status and will propose some additional measures for future research.

Dimensions of Health Status

A. General Health Perceptions

As discussed earlier, the concept of general health perceptions is considered a holistic aspect of health status. It is defined in terms of perceptions of prior, current and future health. In the 1982 survey, three questions on general health perceptions were included in the interview questionnaire. The first question refers to respondent's subjective assessment of his health today as compared with his evaluation of his health two years ago. The second asks respondents to compare their current health with that of other people of the same age. The third question, "What do you expect your health will be 5 years from now?", calls for a projected future health status. The five original response options for each of the three questions range from "much better" to "much worse." In order to develop a composite index of general health perceptions (GHP), the first step is to recode the five responses into three categories: "better" (including "much better" and "slightly better"), "same", and "worse" (including "much worse" and "slightly worse"). The second step is to define the permutation of recoded responses from the three questions. Since each question has three recoded responses, the total possible

configurations of the three questions conbined are equal to 27 ($3^3 = 27$). The third step is to assign a score corresponding to the configuration of general perceptions of future, present and past health (the score varies from 0 to 26). The detailed procedure and distribution of actual responses from the sampled migrant farmworkers are presented in Table 1. Column 1 lists the configuration of general perceptions of future, present and past health. In examining permutation order of the three questions, it should be noted that the GHP index puts the highest weight on perception of future health (placed in the first position), followed by perception of current health, while perception of past health has the least weight (placed in the third position). In order to assess the effect of differential weights used in the scoring procedure, a correlation analysis was made between the GHP index and each of the health perceptions. The results indicate that the GHP index has the highest correlation coefficient with perception of future health (.918), followed by perception of present health (.460) and perception of past health (.402). The coefficients clearly indicate that the Index of General Health Perceptions primarily reflects perception of future health and to a lesser extent, perceptions of present and past health.

A GHP score measures not only the pattern of general health perceptions but also the general level of health status. For example, if a migrant farmworker perceives that his health two years ago was the same as his health today, that his current health is better than that of other people of the same age and that his health will be better five years from now, the configuration of his response pattern can be expressed as 332 and his GHP score will be equal to 25. Survey data in Table 1 indicate that about 23% of migrant farmworkers in our sample reported a stable health

status (score 13); 3%, extremely low health status (score 0); and slightly over 8%, excellent health status (score 26). This composite measure not only takes into consideration general perceptions of future, present and past health but also shows a greater degree of variation than separate measures of each health status.

B. Mental Health

The Index of General Well-Being (GWB) developed by the National Center for Health Statistics (Dupuy, 1974) has been adopted in this study as a measure of mental health status. The 18 item GWB schedule was designed to measure symptoms of affective and anxiety disorders. Consideration was also given to assessing positive aspects of mental health, including positive well-being and self-control of behavior, thoughts, and feelings (see Appendix for the detailed questions). Fourteen of the 18 GWB items have six response categories and four items (questions 2, 5, 11 and 15) have 11 responses. For the former type of question, six responses are coded on a 0 (least favorable) to 5 (most favorable) continuum; for the second type, 11 responses are assigned on a scale of 0 (least favorable) to 10 (most favorable). The summated scores of the 18 items may range from 0 to 110, with higher scores indicating higher mental health status.

Using data from the National Health and Nutrition Examination survey, Wan and Liveratos (1978) concluded that "the GWB may be regarded as a useful tool for portraying the psychological dimension of the health of a given population." In a more recent study, Chi (1985b) demonstrates that the Index of General Well-Being is a valid and reliable measure of mental health status that is equally as usable for migrant farmworkers as for the general population.

The Index of General Well-Being is significantly related to the Index of General Health Perceptions (see Table 2). The moderate coefficient (.348) indicates that both measures are somewhat positively correlated, yet they still reflect distinct dimensions of health status. In future studies, mental health and general health perceptions can be separately measured and independently analyzed.

C. Physical Health

In the literature, physical health is usually defined in terms of (a) functional capacity, (b) presence or absence of some acute and chronic diseases and (c) number of disability days. The functional definition of physical health refers to performance of a variety of activities normally required for an individual in good health. A review of the literature (Stewart et al., 1978) identifies four major categories of activities that primarily reflect a person's physical health. These are: self-care activities (e.g., feeding and bathing), mobility (e.g., confinement indoors), physical activities (e.g., walking, running) and household activities (e.g., daily household chores). Since migrant farmworkers usually engage in physically demanding work, measures of their functional capacity will be confined to some unique work-related activities, such as walking uphill, climbing a ladder, stooping, lifting heavy objects and staying out in the sun. Detailed questions on these activities are presented in the Appendix.

The second measure of physical health will be determined in terms of the absence or presence and severity of some 21 specific health problems (the list of diseases is presented in the Appendix). Finally, physical

health can be measured in terms of total number of days in bed because of any illness or injury during the past 12 months (see Appendix for detail).

In the 1982 New York Migrant Health Interview survey, number of disability days due to illness and injury was used as the measure of physical health. Since migrant farmworkers in our sample were selected from active working-age groups (from 18 to 64), 82% of respondents reported no disability days at all during the past 12 months. In other words, only 18% of migrant farmworkers have values greater than 0. The skewed distribution of this measure may account for a low mean value (1.616) and a relatively high standard deviation (6.384) (see Table 2). Further, no significant relationships were found between number of disability days and measures of mental health or general health perceptions. From these results, we may conclude that number of disability days is not a sensitive measure of the physical health of migrant farmworkers.

D. Social Health

Although the literature on conceptualization of social health indicates less consensus than that on physical health, there seems to be some agreement that social health could be operationally defined in terms of social network (e.g., presence of family members, co-workers and friends) and activities of social participation (e.g., visits with friends and participating in social clubs). The measures include both objective (e.g., counts of number of friends and memberships) and subjective ratings (e.g., how well one is getting along with others) (Donald et al., 1978). Since migrant farmworkers are transitory, regularly migrating between the home community and New York State, questions on social network and social participation will be asked for both places. Some composite measures could

be constructed to reflect the overall status of social health. Detailed questions on social health are presented in the Appendix.

Discussion

Health status of migrant farmworkers is viewed as a state of complete physical, mental and social well-being. It is suggested that the overall health status of migrant farmworkers can be measured in terms of general perceptions of future, present and past health.

Specific measures have been suggested for the physical, mental, and social dimensions of health status. Limited empirical data indicate that number of disability days is not a good measure of the physical health of migrant farmworkers. Measures based on functional capacity and on presence and severity of some 21 specific health problems should be used as additional measures of migrants' physical health.

Although no measure of social health was included in the 1982 New York Migrant Health Interview Survey, measures of this dimension in terms of social network and social participation have been suggested for future studies.

The mental health status of migrant farmworkers, a previous study has shown (Chi, 1985b), can be measured by means of the Index of General Well-Being (GWB), a composite measure developed by the National Center for Health Statistics. This measure of mental health status is significantly correlated with the Index of General Health perceptions (see Table 2). The moderate coefficient (.348) indicates that both measures are somewhat positively related, yet they still reflect distinct dimensions of health status.

In Chi's analysis of variation in mental health status among migrant farmworkers (1985b), comparisons of total GWB scores were made between migrant farmworkers and the general population. Age-sex differentials were also compared between the two groups. The GWB index was further used as a dependent variable in examining the determinants of subjective well-being.

A final point to be noted is that, since all measures of health status developed in the current study are continuous variables, they can be advantageously used to develop multivariate models to predict other social and economic behavior for migrant farmworkers (e.g., level of economic productivity or amount of alcohol consumption). Further, measures of four dimensions of health status can be used as dependent variables for evaluation studies of health programs. For example, Rand Corporation has conducted a social experiment in six sites across the United States to investigate the effects of different health care financing arrangements on four aspects of health status for some 8,000 participants (Ware, et al., 1980).

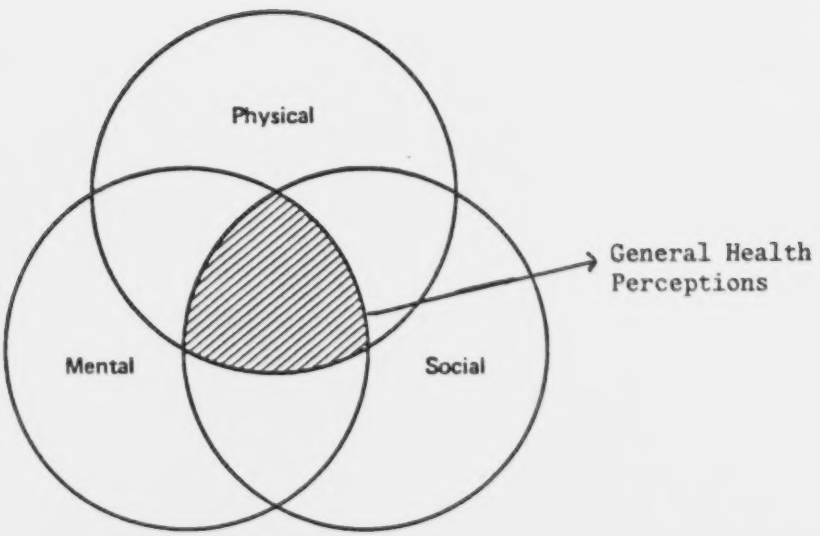

Fig. 1 -- Hypothesized relationships among four major dimensions of individual health status

Table 1. Construction of an Index of General Health Perception (GHP) for Migrant Farm Workers in Wayne County, New York, 1982

Configuration of General Perceptions of Future, Present and Past Health*	Frequency	Percentage	GHP Score
(1) 111**	4	3.01	0
(2) 112	3	2.26	1
(3) 113	1	0.75	2
(4) 121	3	2.26	3
(5) 122	12	9.02	4
(6) 123	2	1.50	5
(7) 131	5	3.76	6
(8) 132	4	3.00	7
(9) 133	2	1.50	8
(10) 211	0	0.0	9
(11) 212	0	0.0	10
(12) 213	0	0.0	11
(13) 221	1	0.75	12
(14) 222	30	22.56	13
(15) 223	2	1.50	14
(16) 231	0	0.0	15
(17) 232	24	18.05	16
(18) 233	1	0.75	17
(19) 311	0	0.0	18
(20) 312	1	0.75	19
(21) 313	3	2.26	20
(22) 321	1	0.75	21
(23) 322	4	3.01	22
(24) 323	7	5.26	23
(25) 331	3	2.26	24
(26) 332	9	6.77	25
(27) 333	11	8.27	26
Total	133	100.0	--

* The first position represents the respondent's general perception of future health; the second position, present health; the third, past health.

** 1 = worse, 2 = same, 3 = better.

Table 2: Means, Standard Deviations, and Zero-Order Correlations Between Physical Health, Mental Health and General Health Perceptions of Migrant Farmworkers in Wayne County, New York, 1982.

	Measures of Health Status		
Measures	(1) Bed days	(2) GWB Index	(3) GHP Index
Measure of Physical Health			
(1) Bed Days	1.000	.0049	0.164
Measure of Mental Health			
(2) GWB Index		1.000	0.348**
Measure of General Health Perceptions			
(3) GHP Index			1.000
Mean	1.616	78.380	14.467
S.D.	6.384	15.820	7.207

** Significant at 1% level.

Appendix: Questions Used to Construct Measures of Various Dimensions of Health Status for Migrant Farmworkers

I. General Health Perception

1. How would you say your health today compares with your own health two years ago?

_____ much better

_____ slightly better

_____ about the same

_____ slightly worse

_____ much worse

_____ don't know

2. What do you expect your health will be five years from now?

_____ much better

_____ slightly better

_____ about the same

_____ slightly worse

_____ much worse

_____ don't know

3. In thinking about other people you know of your age, how would you compare your health with theirs?

_____ much better

_____ slightly better

_____ about the same

_____ slightly worse

_____ much worse

_____ don't know

II. Mental Health

1. During the past month, have you been bothered by any illness, bodily disorder, pains, or fears about your health?

_____ all the time

_____ most of the time

_____ a good bit of the time

_____ some of the time

_____ a little of the time

_____ none of the time

2. How worried about you health have you been?

Not Worried At All — Very Worried

0 1 2 3 4 5 6 7 8 9 10

3. During the past month, have you felt tired, worn out, used-up or exhausted?

_____ all the time

_____ most of the time

_____ a good bit of the time

_____ some of the time

_____ a little of the time

_____ none of the time

4. During the past month, have you been waking up fresh and rested?

_____ every day

_____ almost every day

_____ fairly often

_____ less than half the time

_____ rarely

_____ none of the time

5. How much energy, pep or vitality do you have?

No Energy At All										Very Energetic
0	1	2	3	4	5	6	7	8	9	10

6. During the past month, how happy, satisfied, or pleased have you been with your personal life?

_____ extremely happy (could not have been more satisfied or pleased)

_____ very happy

_____ fairly happy

_____ satisfied - pleased

_____ somewhat dissatisfied

_____ very dissatisfied

7. During the past month, has your daily life been full of things that were interesting to you?

_____ all the time

_____ most of the time

_____ a good bit of the time

_____ some of the time

_____ a little of the time

_____ none of the time

8. During the past month, have you felt down-hearted and blue?

_____ all the time

_____ most of the time

_____ a good bit of the time

_____ some of the time

_____ a little of the time

_____ none of the time

9. During the past month, how have you benn feeling in general?

_____ in excellent spirits

_____ very good spirits

_____ mostly good spirits me

_____ my spirits have been up and down a lot

_____ in mostly low spirits

_____ very low spirits

10. During the past month, have you felt so sad, discouraged, hopeless, or had so many problems that you wondered if anything was worthwhile?

_____ extremely so (to the point that I have just about given up)

_____ very much so

_____ quite a bit

_____ some--enough to bother me

_____ a little bit

_____ not at all

11. How depressed or chereful have you been recently?

Very Depressed — Very Cheerful

0 1 2 3 4 5 6 7 8 9 10

12. During the past month have you been anxious, worried, or upset?

_____ extremely so (to the point that I have just about given up)

_____ very much so

_____ quite a bit

_____ some--enough to bother me

_____ a little bit

_____ not at all

13. During the past month, have you been under or felt you were under any strain, stress, or pressure?

_____ yes--almost more than I could bear or stand

_____ yes--quite a bit of pressure

_____ yes--some - more than usual

_____ yes--some - but about usual

_____ yes - a little

_____ not at all

14. Have you been nervous during the past month?

_____ extremely so (to the point where I could not work or take care of things)

_____ very much so

_____ quite a bit

_____ some--enough to bother me

_____ a little bit

_____ not at all

15. How relaxed or tense have you been?

Very Relaxed — Very Tense

0 1 2 3 4 5 6 7 8 9 10

16. During the past month, have you been in firm control of your behavior, thoughts, emotions or feelings?

_____ yes, definitely so

_____ yes, for the most part

_____ generally so

_____ not too well

_____ no, and I am somewhat disturbed

_____ no, and I am very disturbed

17. During the past month, have you been feeling emotionally stable and sure of yourself?

_____ all the time

_____ most of the time

_____ a good bit of the time

_____ some of the time

_____ a little of the time

_____ none of the time

18. During the past month, have you had any reason to wonder if you were losing control over the way you act, talk, think, feel, or of your memory?

_____ not at all

_____ only a little

_____ some - but not enought to be concerned or worried about

_____ some and I have been a little concerned

_____ some and I am quite concerned

_____ yes, very much so and I am very concerned

III. Physical Health

A. Functional Capacity

1. Do you have trouble (such as shortness of breath) walking uphill, climbing a ladder or climbing stairs?

_____ yes

_____ no

2. Do you have trouble bending, kneeling or stooping?

_____ yes

_____ no

3. Do you have trouble lifting large or heavy objects?

_____ yes

_____ no

4. Do you have trouble standing for long periods of time?

_____ yes

_____ no

5. Do you have any problems after being out in the sun for long periods of time?

_____ yes

_____ no

B. Disability Days

1. During the past 12 months, did injury or illness keep you in bed?

_____ yes

_____ no

2. Not counting the missed days you mentioned in the last question, did the injury or illness limit the kind of activity you could do at work?

_____ yes

_____ no

If yes, how many days did illness or injury keep you from work?

_____

C. Presence and Severity of Health Problems

1. In looking at your own health, how do each of the following conditions bother you -- not at all, some, or very much?

If you select very much, please state whether you have seen a doctor for this condition.

	Not at all	Some	Very much	Seen a doctor?
A. eye trouble	____	____	____	____
B. ear trouble	____	____	____	____
C. tooth or gum trouble	____	____	____	____
D. shortness of breath	____	____	____	____
E. pain in the chest	____	____	____	____
F. coughing	____	____	____	____
G. high blood pressure	____	____	____	____
H. sinus trouble	____	____	____	____
I. asthma	____	____	____	____
J. allergies or hay fever	____	____	____	____
K. swollen joints	____	____	____	____
L. backache	____	____	____	____
M. irritability	____	____	____	____
N. stomach pains	____	____	____	____
O. kidney trouble	____	____	____	____
P. bladder trouble	____	____	____	____
Q. arthritis	____	____	____	____
R. rashes	____	____	____	____
S. headaches	____	____	____	____
T. menstrual troubles (females only)	____	____	____	____
U. diabetes	____	____	____	____
V. other, please specify	____	____	____	____
_____	____	____	____	____

D. Social Health

A. In the Home Community

1. In the last year while in your home community, about how often do you get together with friends or relatives (visiting each other's homes)?

_____ every day (evening)

_____ several days a week

_____ about one a week

_____ about once a month

_____ less than six times a year

_____ other, please specify

2. Are you active or involved in the following activities in your home community? (Interviewer read list first.)

If no, what would you like to participate in?

	Yes	No	Would like to participate
a. your organizations	_____	_____	_____
b. religious groups	_____	_____	_____
c. sports groups	_____	_____	_____
d. music, art or crafts	_____	_____	_____
e. political group	_____	_____	_____
f. farm group	_____	_____	_____
g. volunteer work for community services	_____	_____	_____
h. other, please specify	_____	_____	_____

3. Generally, how active are you in the groups, clubs and organizations you belong to?

_____ very active, attend most meetings

_____ fairly active

_____ not active, hardly ever go to meetings, etc.

_____ do not belong to groups, clubs or organizations

B. In the Camp

1. In general, how well are you getting along with co-workers, crew leaders or growers at work these days?

_____ much better than usual

_____ about the same

_____ slightly worse

_____ much worse

_____ not at all

2. Do you feel like you fit in with other people in the camp?

_____ Yes

_____ No

If no, why don't you fit in?_____

_____

3. In this County, how well are you getting along with friends and other people outside of work these days?

_____ much better than usual

_____ about the same

_____ slightly worse

_____ much worse

_____ not at all

4. While in this County, who do you turn to when you need help or personal advice?

_____ close friends

_____ parents

_____ other family members

_____ co-workers

_____ the crew leader

_____ others, please specify

5. During the season in this County, are there any activities on this list that you participate in?

   If no, what would you like to participate in?

	Yes	No	Would like to participate
a. youth organizations	_____	_____	_____
b. religious groups	_____	_____	_____
c. sports groups	_____	_____	_____
d. music, art or crafts	_____	_____	_____
e. political group	_____	_____	_____
f. farm group	_____	_____	_____
g. volunteer work for community services	_____	_____	_____
h. other, please specify	_____	_____	_____

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